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Influence of Personality on Emotional Contagion through Social Media

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I. Introduction

Prior research has shown that individual personality correlates with different types of social network use and that communication through social media exhibits a real form of emotional contagion. However, while use of social media is increasing rapidly and influencing our day-to-day life in various ways, the psychological influence of negative content often circulated on social media is not well understood. To address this void, this study seeks to elucidate the connection between personality and emotional contagion through social media in order to better understand the potential impact on users. Specifically, this study aims to learn about how different personality characteristics relate to the emotional impact of Facebook use, which could show how social media and internet use impacts individuals' mental health as we move into an increasingly connected world. The details of our study are below.

II. Previous Research

A. Personality

As a burgeoning sector of the modern public social domain, the internet's effect on people has only recently begun to be explored. In 2009, Ross et al led one of the pioneering studies on internet and personality by examining the correlation between the Big Five personality characteristics and different measures of Facebook use. The Big Five, also known as the Five-Factor Model (FFM), breaks human personality into 5 traits: Extraversion, Neuroticism, Openness to Experience, Agreeableness, and Conscientiousness. Ross examined the Facebook use of say, the most extraverted and least extraverted thirds of participants. This gave insight into how people's offline behavior translates into their modern internet personality (Ross et al., 2009).

Extraversion relates to characteristics such as being energetic, outgoing, and talkative. It encompasses aspects of an individual's interpersonal traits (McCrae, 1992). In Ross' study, extraverted personality predicted more Facebook group involvement (Ross et al., 2009). Higher scores on Extraversion have been associated with more Facebook friends (Amichai-Hamburger & Vinitsky, 2010; Wang, Jackson, Zhang & Su, 2012). Extraverts less frequently use personal information on social networking sites (Amichai-Hamburger & Vinitsky, 2010). Furthermore, they have been found to play fewer online games while posting more comments, photos and status updates (Wang et al., 2012). Marcus, Machilek and Schutz (2006), in their study of personality characteristics and website ownership, found that those who owned websites scored lower on Extraversion than non-website owners. There is a two-faceted interaction in that the internet is a new social environment for extraverts, while it also removes them from offline social environments.

Agreeableness is associated with kindness, sympathy, and altruism. Like Extraversion, it relates to people's interpersonal characteristics (McCrae, 1992). Amichai-Hamburger and Vinitsky (2010) found a U-shaped correlation in which those with high and low Agreeableness scores upload more pictures than those with moderate scores, with high Agreeableness scores also relating to use of fewer page features. Individuals high on Agreeableness make more comments as well (Wang et al., 2012). Gender has been also found to interact significantly with Agreeableness—women scoring low on Agreeableness had fewer pictures than those high on Agreeableness, while this effect was not found for men (Amichai-Hamburger & Vinitsky, 2010). This suggests that construction of an internet self-image is impacted by gender-related social pressures. Gender, in addition to personality factors, is an important factor in internet behavior.

Conscientiousness relates to an individual's organization, orientation around tasks, and lack of self-indulgence. Those scoring high on Conscientiousness are responsible, thorough, and productive (McCrae, 1992). More friends and fewer picture uploads have been associated with high Conscientiousness (Amichai-Hamburger & Vinitsky, 2010). This factor interacts with online personality in a dichotomous fashion similarly to Extraversion. Conscientious individuals may extend their diligence to online social networks, or it may distract from their offline responsibilities.

Neuroticism relates to an individual's feelings of anxiety and worry, fluctuating moods, and self-consciousness (McCrae, 1992). Because social media gives users the ability to craft their personal image in a panoptic environment (where one is able to anonymously observe and compare oneself to others), the self-conscious tendencies of neurotic individuals can be exacerbated online (Nitzburg & Farber, 2013). Ross found that high Neuroticism corresponded with a preference for using the Facebook wall to communicate. Those in the less neurotic group "preferred posting photos" (Ross et al., 2009). In contrast, Amichai-Hamburger and Vinitsky (2010) found neurotic individuals to post more pictures of themselves than other pictures, and a U-shaped correlation with sharing basic information. The least neurotic likely felt most comfortable sharing information, while the most neurotic probably felt the need to carefully craft their image for others. More status updates have also been associated with neurotic personalities (Wang et al., 2012).

Openness to Experience is based on a person's creativity and imagination. It is characterized by a wide range of interests and some degree of introspection (McCrae, 1992). Ross found the Openness factor to be associated with greater "online sociability," a customized measure characterized by using several different features of the social network (Ross et al.,

2009). This exploration of several online features is a trend in several internet personality studies. Those with higher Openness to Experience use more personal information features (Amichai-Hamburger & Vinitsky, 2010). They also play more online games (Wang et al., 2012). The proliferation of the internet as a means of entertainment may suggest why those higher on Openness have been found to spend more time on Facebook per day and to have more friends (Skues, Williams, & Wise, 2012). Furthermore, website owners were found to score high on Openness (Marcus et al., 2006).

B. Emotional Contagion

Just as offline personalities manifest in the online world, online social media experiences impact people's offline lives. For example, in one study, individuals reported higher degrees of narcissism after editing their Myspace page than prior to editing it (Gentile, Twenge, Freeman & Campbell, 2012). Another study investigated feelings of envy and depression associated with Facebook use, and found that "heavy" users had more envy, which was found to be correlated with depression (Tandoc Jr., Ferrucci & Duffy, 2015). Undoubtedly, the panoptic space of the online social network has and will continue to impact individuals on a personal and emotional level.

Emotional contagion is the transfer of emotional states between individuals. This "contagion of mood" occurs when "people transfer positive and negative moods and emotions to others", and was investigated by Kramer, Guillory, & Hancock (2014) in the context of internet social networks. Their 20-year study utilized Linguistic Inquiry and Word Count Software to evaluate the positive or negative nature of posts and manipulate the emotional content in users' Facebook feeds. Findings showed that users with "positive content reduced" in their feed posted

more negative content, and vice versa (Kramer et al., 2014). A similar observational study on Twitter by Ferrara & Yang (2015) found that users tweeted negatively after "over-exposure to 4.34% more negative stimuli" and positively after "over-exposure to 4.50% more positive tweets".

Emotional contagion through social networks affects individuals differently based on personality characteristics. Obviously, different personalities breed different patterns of use, which lead to varying amounts of social media engagement and therefore a different extent of impact. Attachment in relationships also affects one's interaction with social media (Hart, Nailling, Bizer & Collins, 2015; Nitzburg & Farber, 2013). Those with higher attachment anxiety "feel more intimate" on social networks and individuals with attachment insecurity tend to avoid face-to-face interactions using social networks (Nitzburg & Farber, 2013). It has also been found that those with stronger relationship ties are more susceptible to emotional contagion after viewing their own Facebook feed (Lin & Utz, 2015). As noted by Nitzburg and Farber (2013), it is important to consider "emotional balance in the wake of an almost never-ending stream of social information" for the sake of "psychological and social health". The impact that increased connectivity from social media has on individuals' mental health must not be forgotten in lieu of the astounding convenience and allure.

III. Present Study

To better understand how exposure to negative content affects individuals' mood, the present study looks at instantaneous emotional contagion following a simulated Facebook session. This focuses on short-term results of social media use rather than the long-term effects investigated in some previous research. After viewing a negatively-charged Facebook post and

reading user comments, participants' mood state was evaluated to see if emotional contagion occurred. Five hypotheses predicting the nature of emotional contagion were formulated (one for each of the Big Five personality characteristics):

1. Because of their ability to be sociable offline and thus place less importance on online experience, it was hypothesized that individuals with high Extraversion scores would experience less emotional contagion than those with low Extraversion scores.
2. Because of their altruistic and sympathetic behavior, it was hypothesized that individuals with high Agreeableness scores would experience more emotional contagion than those with low Agreeableness scores.
3. Because of their productivity and offline priorities, it was hypothesized that individuals with high Conscientiousness scores would experience less emotional contagion than those with low Conscientiousness scores.
4. Because of their fluctuating moods and anxiety, it was hypothesized that individuals with high Neuroticism scores would experience more emotional contagion than those with low Neuroticism scores.
5. Because of their explorative usage of the internet and social media features, it was hypothesized that individuals with high Openness to Experience scores would experience more emotional contagion than those with low Openness to Experience scores.

IV. Methods

A. Participants

Two hundred fifty individuals participated in the present study. Participants were only required to be Amazon Mechanical Turk users 18 years or older and currently living in the United States. There were 135 women and 115 men with a mean age of 35.3 years. Each participant was compensated $1 for a completed survey via Mechanical Turk.

B. Materials

The survey consisted of two parts which were posted online. Please see Appendix A for the survey instrument.

The first part of the survey contained demographic questions as well as the Big Five personality characteristics and self-esteem. Participant gender was collected, as it has been found that gender interacts with personality in online behavior (Wang et al., 2012; Amichai-Hamburger & Vinitsky, 2010). Age, level of education, employment status, and race were also collected for exploratory purposes. The Big Five personality characteristics were evaluated using the 44-item Big Five Inventory (BFI) (John, Naumann, & Soto, 2008; John, Donahue, & Kentle, 1991). The five-point Likert scales for each of the five personality factors have been found to be reliable (Wang et al., 2012). The length of this inventory was preferable to that of NEO-PI-R alternatives, such as that used by Ross et al. (2009). After the BFI questions, the 10-item Rosenberg Self-Esteem Scale evaluated user self-esteem (Rosenberg, 1965). This was done to examine the effect of different personality aspects (not just the Big Five), as self-esteem has been shown to correlate with different types of social media use and emotional contagion (Lin & Utz, 2015; Wang et al., 2012).

After the first part of the survey, participants were asked to view a mock Facebook post. This consisted of a Facebook post published on the public page "Watch This News" (https://www.facebook.com/WatchThis/?fref=ts) as well as 11 comments from Facebook users. The mock Facebook post is included in the survey instrument in the Appendix A. It was reformatted to fit the pages of this report. User profile pictures and names were covered in the image on the survey. Numbers of likes, shares, and times of comments remained so the post would look more like an actual Facebook post. The article shown in the post, "11-Year-Old Boy Doesn't Realize What's Inside Cookie, Dies Shortly After Eating It," was chosen for its potential to invoke a negative emotional response from viewers. Participants were not able to read the article but were exposed to its title, a short summary, and Facebook users' commented responses.

The second part of the survey evaluated the emotional contagion experienced by the participant as a result of the mock Facebook feed. The Brief Mood Introspection Scale (BMIS) was used to evaluate the participant's mood after their simulated Facebook use (Mayer & Gaschke, 1988). Instead of the Meddis response scale conventionally used with the BMIS, which uses XX, X, V, and VV, the phrases "Definitely do not feel," "Do not feel," "Slightly feel," and "Definitely feel" represented scores of 1, 2, 3, and 4, respectively. The BMIS asks about positive and negative mood phrases and adjectives. Overall mood was also evaluated on a "Very Unpleasant" to "Very Pleasant" scale from -10 to 10. Participants' mood state after viewing the feed was observed as the manifestation of emotional contagion via Facebook content.

C. Procedure

The survey was hosted on the University of Connecticut's licensed Qualtrics survey platform where participants anonymously answered questions. No identifying information was

collected with survey responses. After the survey, participants received a random code to use on Mechanical Turk for compensation. The code was removed from Qualtrics after compensation was received. The survey took participants on average about 7 minutes (Mean = 7.00, Median = 5.00, SD = 7.71). Recruitment for the study happened during April 2016.

V. Results

Participants spent an average of 87.6 seconds (Median = 70.4, SD = 74.0) viewing the mock Facebook post, calculated from timing of page submission on the survey. Emotional contagion experienced by users was evaluated by different measures of the BMIS mood scale. To avoid response bias, mood was evaluated only after the viewing of the mock Facebook post, not before. Therefore, we assumed that mood variation prior to viewing the Facebook post would be handled by the sample size and balanced amongst the different personality characteristics. The BMIS was scored for four measures that relate to different emotions: Pleasant-Unpleasant, Arousal-Calm, Positive-Tired, and Negative-Relaxed (Mayer & Gaschke, 1988). BMIS items used to calculate these measures are included in Appendix B. Reliability was good for Pleasant-Unpleasant (Cronbach's $\alpha = 0.89$), Positive-Tired ($\alpha = 0.81$), and Negative-Relaxed ($\alpha = 0.82$) (Kline, 1993). Arousal-Calm ($\alpha = 0.50$) was therefore omitted from analysis.

To test the hypotheses, correlational analysis was done between the Big Five personality factors, self-esteem and the mood measures. The BFI subscales for Extraversion ($\alpha = 0.89$), Agreeableness ($\alpha = 0.84$), Conscientiousness ($\alpha = 0.89$), Neuroticism ($\alpha = 0.92$), and Openness to Experience ($\alpha = 0.89$) were all very reliable, supporting previous research (John et al., 2008). Reliability was also good for self-esteem ($\alpha = 0.94$). We mainly observed a lower Pleasant-

Unpleasant BMIS score as evidence of negative emotional contagion from the mock Facebook post. The resulting correlation coefficients are in Table 1.

Table 1

Spearman correlation coefficients (ρ) between personality and mood after mock Facebook feed

	Mood (BMIS)			
Personality Traits (BFI, Rosenberg SE)	Pleasant-Unpleasant	Positive-Tired	Negative-Relaxed	Overall Mood
Extraversion	0.445**	0.480**	-0.316**	0.400**
Agreeableness	0.504**	0.498**	-0.383**	0.354**
Conscientiousness	0.492**	0.540**	-0.349**	0.339**
Neuroticism	-0.631**	-0.596**	.489**	-0.502**
Openness to Experience	0.152*	0.203**	-0.126*	0.078
Self-Esteem	0.602**	0.553**	-0.492**	0.498**

*Correlation is significant at the 0.05 level; **Correlation is significant at the 0.01 level

Hypothesis 1 and Hypothesis 3 were both supported by the results. Higher Extraversion as well as higher Conscientiousness were significantly positively correlated with positive mood measures (Pleasant-Unpleasant, Positive-Tired, and Overall Mood) and significantly negatively correlated with Negative-Relaxed mood. Those with higher Extraversion scores and those with higher Conscientiousness scores tended to have a more positive mood, evidence of less emotional contagion by the negative content of the Facebook feed.

Contrary to Hypothesis 2, high Agreeableness was actually positively correlated with the positive mood measures and negatively correlated with Negative-Tired. As with Agreeableness and Conscientiousness, this was evidence of less emotional contagion by the negative Facebook content.

Hypothesis 4 was supported by the data, as Neuroticism was found to have a significant negative correlation with the positive mood measures and a positive correlation with Negative-Tired. Those more neurotic had a more negative mood after the Facebook feed, showing that the Facebook feed influenced them with negative emotional contagion.

Openness to Experience was significantly positively correlated with positive mood measures, contrary to Hypothesis 5. Those high on Openness had slightly more positive mood after the Facebook feed, suggesting less emotional contagion by the negative content. Coefficients for Openness were significantly smaller than those for other factors, so the relationship between this factor and emotional contagion is inconclusive.

Self-esteem positively correlated with the positive mood measures. Those with lower self-esteem were more susceptible to negative mood after the feed. Also, correlational analysis revealed that self-esteem correlated with each of the personality factors respective to the effect each factor had on mood (i.e. Agreeableness & Self-Esteem: $\rho = 0.518$, $p < 0.01$; Neuroticism & Self-Esteem: $\rho = -0.680$, $p < 0.01$). A linear regression was performed to see the proportional effect of personality, including self-esteem, on the mood measures. Table 2 shows the results of the linear regression.

Table 2

Linear regression coefficients, significance between personality and mood after mock Facebook feed

	Dependent Variable: *Mood* (BMIS)											
	Pleasant-Unpleasant			Positive-Tired			Negative-Relaxed			Overall Mood		
Personality Traits (BFI, Rosenberg SE)	B	t	p	B	t	p	B	t	p	B	t	p
Extraversion	2.01	3.86	0.000	1.15	4.32	0.000	-0.52	-1.90	0.059	1.01	3.09	0.002
Agreeableness	1.65	2.38	0.018	0.95	2.68	0.008	-0.45	-1.22	0.222	0.01	0.02	0.983
Conscientiousness	1.69	2.31	0.022	1.30	3.49	0.001	-0.36	-0.93	0.355	0.25	0.55	0.583
Neuroticism	-2.12	-3.36	0.001	-0.84	-2.61	0.010	0.63	1.89	0.059	-1.03	-2.60	0.010
Openness to Experience	-1.16	-2.13	0.034	-0.30	-1.06	0.289	0.44	1.53	0.127	-0.84	-2.44	0.015
Self-Esteem	0.33	3.51	0.001	0.09	1.79	0.074	-0.16	-3.18	0.002	0.20	3.33	0.001

Comparison of moods between male and female participants found no significant differences due to gender of participants. Means of male Positive-Tired, Negative-Relaxed and Overall Mood were slightly higher than those of females, while female Pleasant-Unpleasant mood had a slightly higher mean than males.

VI. Discussion

The present study sought to build upon previous research on online personality which has found that individuals' personalities transfer to social networks. Our results supported this notion, showing that personality can give us insight into how a person may respond to engagement with online content. Three of our initial hypotheses (H1, H3, and H4) were supported by the data. Results also suggest that highly agreeable individuals, as well as those with higher self-esteem, are less susceptible to emotional contagion.

Hypothesis 1 tells us that the Extraversion personality factor plays a major role in how people are affected by social media use. Extraversion was a hugely influential variable affecting Pleasant-Unpleasant mood ($B = 2.01$, $p = 0.000$), and also significantly influential in Positive-Tired ($B = 1.15$, $p = 0.000$) and Overall Mood ($B = 1.01$, $p = 0.002$). This aligns with previous research in which extraverts are less engaged in website-owning and online games (Wang et al., 2012; Marcus et al., 2006). The mock Facebook post was not related to a participant's actual social circle, which may explain why more extraverted individuals who tend to have more Facebook friends were not as affected by the impersonal negative Facebook content in the survey (Wang et al., 2012; Amichai-Hamburger & Vinitsky, 2010).

Though Hypothesis 2 was not supported, results showed that Agreeableness was a significant predictor of Pleasant-Unpleasant ($B = 1.65$, $p = 0.018$) and Positive-Tired ($B = 0.95$, $p = 0.008$) mood. This seems to contradict the empathetic characteristics associated with highly agreeable individuals (McCrae, 1992). However, associations between Agreeableness and Extraversion ($\rho = 0.333$, $p < 0.01$) suggest that highly Agreeable individuals, like extraverts, place more importance on their own interpersonal relationships. Therefore, they were not subject to negative emotional contagion by the impersonal story given in the mock Facebook post. Also,

correlation with self-esteem ($\rho = 0.518$, $p < 0.01$) implies that Agreeable individuals are more emotionally stable, and therefore less influenced by Facebook emotional contagion.

Hypothesis 3 showed that the diligent behaviors associated with Conscientiousness allowed highly conscientious individuals to be more protected against negative emotional contagion. Conscientiousness was the most significant predictor of Positive-Tired mood ($B = 1.30$, $p = 0.001$). Those with high Conscientiousness scores were more able to remain on task than those less conscientious, not letting the content of the mock Facebook feed affect them negatively.

Hypothesis 4 shows that Neuroticism has a significant effect on experiencing negative emotional contagion. It was a significant predictor of Pleasant-Unpleasant ($B = -2.12$, $p = 0.001$), Positive-Tired ($B = -0.84$, $p = 0.010$), and Overall Mood ($B = -1.03$, $p = 0.010$). Highly neurotic individuals also had significantly lower self-esteem ($\rho = -0.680$, $p < 0.01$). These findings align with previous research in which the anxieties of highly neurotic individuals manifest online with more photos of themselves and more frequent status updates (Wang et al., 2012; Amichai-Hamburger & Vinitsky, 2010). Stressors and uncertainties of the online social environment cause neurotic individuals to invest personally in the content, in this case resulting in negative emotional contagion.

Hypothesis 5 was not supported as Openness to Experience was slightly positively correlated with Pleasant-Unpleasant mood in correlational analysis. However, the linear regression revealed it to be a significant negative predictor in Pleasant-Unpleasant ($B = -1.16$, $p = 0.034$) and Overall Mood ($B = -0.84$, $p = 0.015$). These findings are in line with Hypothesis 5. Previous research suggesting that high Openness individuals use several online features may explain why there is not a clear result regarding Openness (Ross et al., 2009). Some may be too

busy exploring their social network to be emotionally affected by negative content, while others may earnestly delve into specific content that causes them to experience emotional contagion.

As mentioned, self-esteem was a major influence on mood measures in correlational analysis. Linear regression showed that it was not as large of a factor relative to the Big Five (Pleasant-Unpleasant: $B = 0.33$, $p = 0.001$; Negative-Relaxed: $B = -0.16$, $p = 0.002$; Overall Mood: $B = 0.20$, $p = 0.001$). A significant finding was that self-esteem correlated significantly ($p < 0.01$) with every one of the Big Five: Extraversion ($\rho = 0.397$), Agreeableness ($\rho = 0.518$), Conscientiousness ($\rho = 0.617$), Neuroticism ($\rho = -0.680$), and Openness to Experience ($\rho = 0.283$). The Big Five and self-esteem shape how humans interact with their environments, especially social ones. Clearly, personality and one's self-views are determining factors in emotional contagion via social media.

VII. Limitations and Future Research

The presence of negative emotional contagion in this study was considered as having a negative mood after viewing the mock Facebook feed. This was based on the assumption that participant moods across all personality factors would be evenly distributed before coming into the study. If, for example, neurotic individuals generally are in worse moods, mood would not directly indicate emotional contagion by the Facebook feed—it may just be indicative of the individual's general mood. Also, mood survey questions themselves may exhibit emotional contagion. The sample size of 250 should have handled most of the mood variation, but future research should be designed to see if the Big Five characteristics relate to the BMIS mood factors in any particular way.

Additionally, future research should investigate different types of social media content as they relate to emotional contagion. The post in this study was a general news story related to a food allergy death. The effect of content posted by a person's social media peers should be further investigated, as relationship ties are a big factor in emotional responses to online engagement (Lin & Utz, 2015; Nitzburg & Farber, 2013). This would shed light on this study's findings related to Extraversion and Agreeableness—the interpersonal nature of those characteristics would be more applicable. Also, presenting the content of the post as more or less similar to a real Facebook environment may show that users have an emotional association with the social network's environment that influences contagion. Survey presentation itself may even have a lot to do with mood fluctuation for different personality types. A conscientious study participant may develop a better mood answering survey questions than a neurotic individual who feels that they are being too aggressively questioned.

Information about the time participants took on different parts of this survey was gathered to observe the possible change in attention span due to being in the simulated fast-paced, attention-grabbing environment of Facebook. Questions after the feed were answered on average faster than question prior, though the difference was not very significant. This is one of many short-term effects that social media use may have on people. Future research should look into different ways that Facebook and other social networks influence people's behavior after use.

VIII. Conclusion

Before a new prescription drug enters the market, would its short- and long-term health impacts not be investigated? Or would its interaction with different people's health conditions

and other drugs be diligently accounted for? This study's results show that Facebook influences people in subtle ways that have not been substantially considered proportionally to the proliferation of its use. Individuals who are less extraverted, less agreeable, less conscientious, more neurotic, and have lower self-esteem are prone to the emotional influence of negative social media content, especially if use, and therefore the short-term mood effects, are frequent. As technology continues to grow and fill the gaps in our lives, it is the responsibility of doctors, engineers, legislators, and consumers to consider how mental health is affected by exposure to social media.

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Appendix

A. Survey Instrument

Q1.1 What is your gender?

- ❍ Male (1)
- ❍ Female (2)
- ❍ Other (3)

Q1.2 What is your age?

Q1.3 What is the highest level of education you have received?

- ❍ Less than High School (1)
- ❍ High School / GED (2)
- ❍ Some College (3)
- ❍ 2-year College Degree (4)
- ❍ 4-year College Degree (5)
- ❍ Master's Degree (6)
- ❍ Doctoral Degree (7)
- ❍ Professional/Medical Degree (JD, MD) (8)
- ❍ Other (9) _____

Q1.4 Which describes your current employment status?

- ❍ Full Time (1)
- ❍ Part Time (2)
- ❍ Self-employed (5)
- ❍ Care-provider (6)
- ❍ Homemaker (7)
- ❍ Student (8)
- ❍ Retired (3)
- ❍ Unemployed (4)
- ❍ Other (9) _____

Q1.5 What is your race?

- ❍ White/Caucasian (1)
- ❍ African American (2)
- ❍ Hispanic (3)
- ❍ Asian (4)
- ❍ Native American (5)
- ❍ Pacific Islander (6)
- ❍ Other (7) _____

Q2.1 Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please rate how much you agree or disagree with each statement.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I am someone who is talkative (1)	❍	❍	❍	❍	❍
I am someone who tends to find fault with others (2)	❍	❍	❍	❍	❍
I am someone who does a thorough job (3)	❍	❍	❍	❍	❍
I am someone who is depressed, blue (4)	❍	❍	❍	❍	❍
I am someone who is original, comes up with new ideas (5)	❍	❍	❍	❍	❍
I am someone who is reserved (6)	❍	❍	❍	❍	❍
I am someone who is helpful and unselfish with others (7)	❍	❍	❍	❍	❍
I am someone who can be somewhat careless (8)	❍	❍	❍	❍	❍
I am someone who is relaxed, handles stress well. (9)	❍	❍	❍	❍	❍
I am someone who is curious about many different things (10)	❍	❍	❍	❍	❍
I am someone who is full of energy (11)	❍	❍	❍	❍	❍
I am someone who starts quarrels with others (12)	❍	❍	❍	❍	❍
I am someone who is a reliable worker (13)	❍	❍	❍	❍	❍
I am someone who can be tense (14)	❍	❍	❍	❍	❍
I am someone who is ingenious, a deep thinker (15)	❍	❍	❍	❍	❍

I am someone who generates a lot of enthusiasm (16)	❍	❍	❍	❍	❍
I am someone who has a forgiving nature (17)	❍	❍	❍	❍	❍
I am someone who tends to be disorganized (18)	❍	❍	❍	❍	❍
I am someone who worries a lot (19)	❍	❍	❍	❍	❍
I am someone who has an active imagination (20)	❍	❍	❍	❍	❍
I am someone who tends to be quiet (21)	❍	❍	❍	❍	❍
I am someone who is generally trusting (22)	❍	❍	❍	❍	❍
I am someone who tends to be lazy (23)	❍	❍	❍	❍	❍
I am someone who is emotionally stable, not easily upset (24)	❍	❍	❍	❍	❍
I am someone who is inventive (25)	❍	❍	❍	❍	❍
I am someone who has an assertive personality (26)	❍	❍	❍	❍	❍
I am someone who can be cold and aloof (27)	❍	❍	❍	❍	❍
I am someone who perseveres until the task is finished (28)	❍	❍	❍	❍	❍
I am someone who can be moody (29)	❍	❍	❍	❍	❍
I am someone who values artistic, aesthetic experiences (30)	❍	❍	❍	❍	❍
I am someone who is sometimes shy, inhibited (31)	❍	❍	❍	❍	❍
I am someone who is considerate and kind to almost everyone (32)	❍	❍	❍	❍	❍
I am someone who does things efficiently (33)	❍	❍	❍	❍	❍
I am someone who remains calm in tense situations (34)	❍	❍	❍	❍	❍
I am someone who prefers work that is routine (35)	❍	❍	❍	❍	❍
I am someone who is outgoing, sociable (36)	❍	❍	❍	❍	❍
I am someone who is sometimes rude to others (37)	❍	❍	❍	❍	❍
I am someone who makes plans and follows through with them (38)	❍	❍	❍	❍	❍
I am someone who gets nervous easily	❍	❍	❍	❍	❍

(39)					
I am someone who likes to reflect, play with ideas (40)	❍	❍	❍	❍	❍
I am someone who has few artistic interests (41)	❍	❍	❍	❍	❍
I am someone who likes to cooperate with others (42)	❍	❍	❍	❍	❍
I am someone who is easily distracted (43)	❍	❍	❍	❍	❍
I am someone who is sophisticated in art, music, or literature (44)	❍	❍	❍	❍	❍

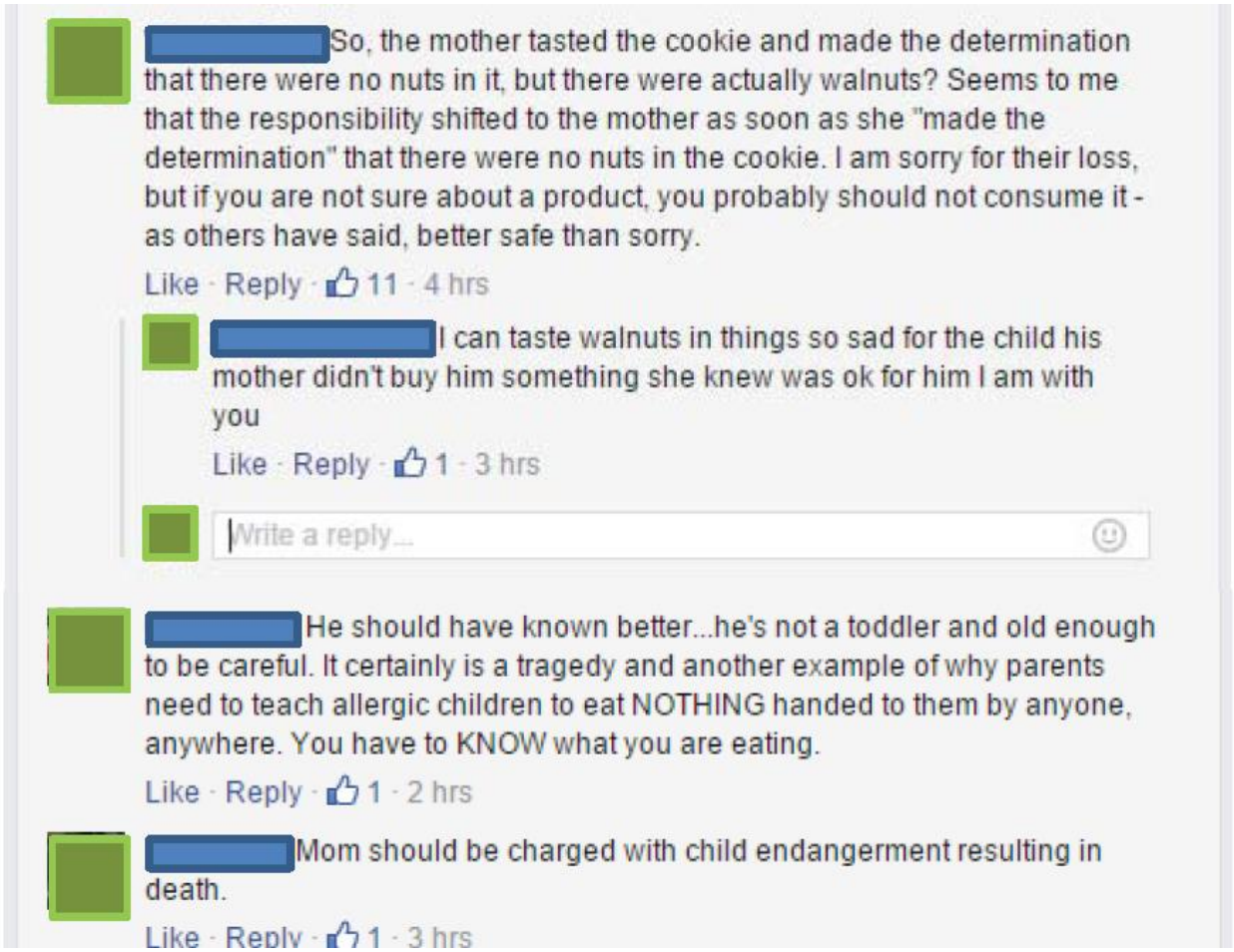
Q2.2 Please rate how much you agree or disagree with each statement.

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
I feel that I am a person of worth, at least on an equal plane with others. (1)	❍	❍	❍	❍
I feel that I have a number of good qualities. (2)	❍	❍	❍	❍
All in all, I am inclined to feel that I am a failure. (3)	❍	❍	❍	❍
I am able to do things as well as most other people. (4)	❍	❍	❍	❍
I feel I do not have much to be proud of. (5)	❍	❍	❍	❍
I take a positive attitude toward myself. (6)	❍	❍	❍	❍
On the whole, I am satisfied with myself. (7)	❍	❍	❍	❍
I wish I could have more respect for myself. (8)	❍	❍	❍	❍
I certainly feel useless at times. (9)	❍	❍	❍	❍
At times I think I am no good at all. (10)	❍	❍	❍	❍

Q2.3 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q3.1 Before you answer the remaining of the survey questions, please read the Facebook feed below.



[redacted] So, the mother tasted the cookie and made the determination that there were no nuts in it, but there were actually walnuts? Seems to me that the responsibility shifted to the mother as soon as she "made the determination" that there were no nuts in the cookie. I am sorry for their loss, but if you are not sure about a product, you probably should not consume it - as others have said, better safe than sorry.

Like · Reply · 11 · 4 hrs

[redacted] I can taste walnuts in things so sad for the child his mother didn't buy him something she knew was ok for him I am with you

Like · Reply · 1 · 3 hrs

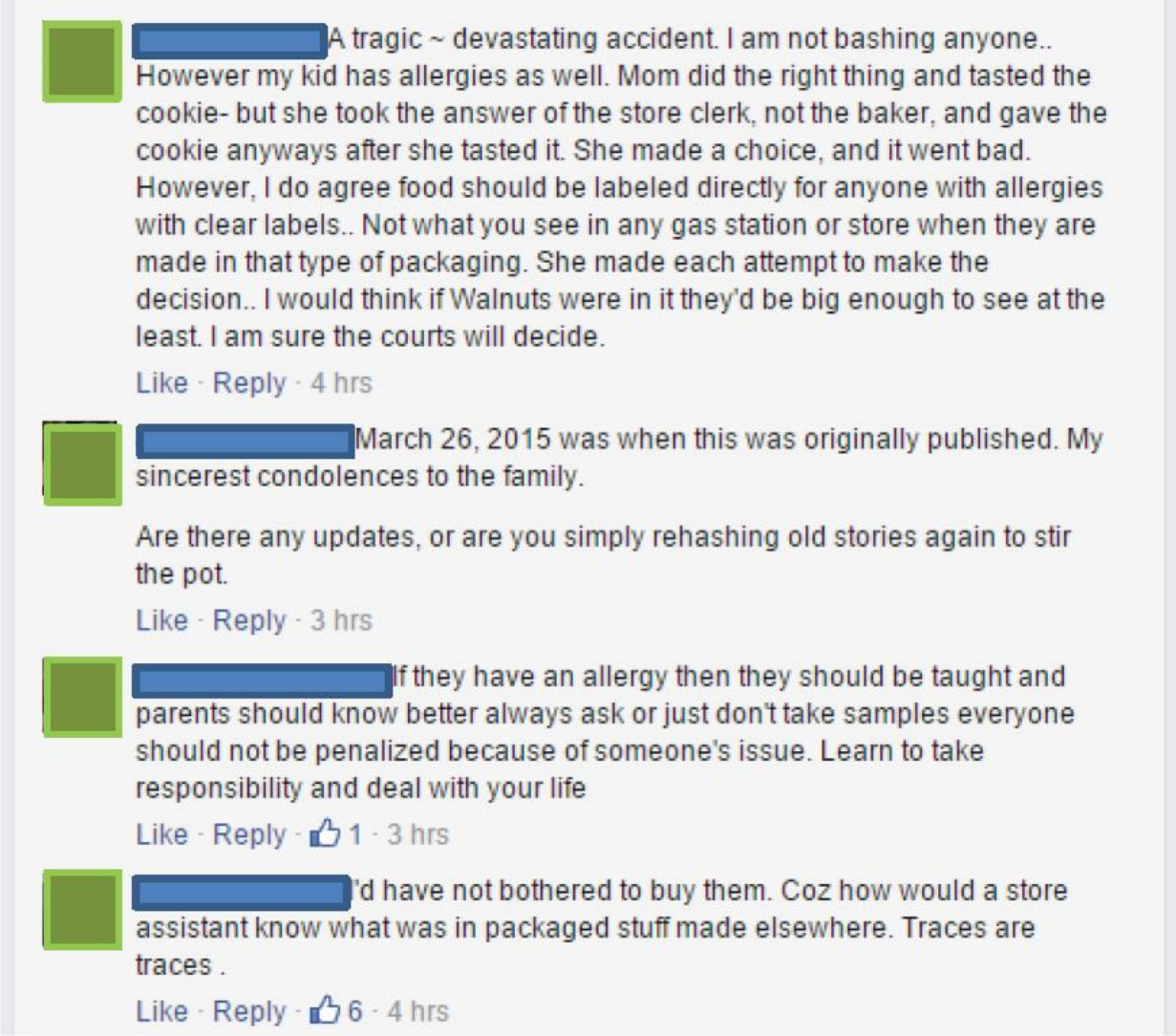
Write a reply...

[redacted] He should have known better...he's not a toddler and old enough to be careful. It certainly is a tragedy and another example of why parents need to teach allergic children to eat NOTHING handed to them by anyone, anywhere. You have to KNOW what you are eating.

Like · Reply · 1 · 2 hrs

[redacted] Mom should be charged with child endangerment resulting in death.

Like · Reply · 1 · 3 hrs



Q3.2 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q4.1 Please rate how much you agree or disagree with each statement that indicates how well each adjective or phrase describes your present mood.

	Definitely do not feel (1)	Do not feel (2)	Slightly feel (3)	Definitely feel (4)
Lively (1)	❍	❍	❍	❍
Drowsy (2)	❍	❍	❍	❍
Happy (3)	❍	❍	❍	❍
Grouchy (4)	❍	❍	❍	❍
Sad (5)	❍	❍	❍	❍
Peppy (6)	❍	❍	❍	❍
Tired (7)	❍	❍	❍	❍
Nervous (8)	❍	❍	❍	❍
Caring (9)	❍	❍	❍	❍
Calm (10)	❍	❍	❍	❍
Content (11)	❍	❍	❍	❍
Loving (12)	❍	❍	❍	❍
Gloomy (13)	❍	❍	❍	❍
Fed up (14)	❍	❍	❍	❍
Jittery (15)	❍	❍	❍	❍
Active (16)	❍	❍	❍	❍

Q4.2 Please rate your overall mood.

	Very Unpleasant -10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	Very Pleasant 10
Overall, my mood is (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q4.3 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q5.1 (Optional) If you have any additional comments, please write them here. Thanks for your input!

B. BMIS Measures

Pleasant-Unpleasant

Positively scored: Active, Calm, Caring, Content, Happy, Lively, Loving, Peppy
Negatively scored: Drowsy, Fed up, Gloomy, Grouchy, Jittery, Nervous, Sad, Tired

Arousal-Calm

Positively scored: Active, Caring, Fed up, Gloomy, Jittery, Lively, Loving, Nervous, Peppy, Sad
Negatively scored: Calm, Tired

Positive-Tired

Positively scored: Active, Caring, Lively, Loving, Peppy
Negatively scored: Drowsy, Tired

Negative-Relaxed

Positively scored: Fed up, Gloomy, Jittery, Nervous, Sad
Negatively scored: Calm